

I. AMENDMENTS AS PER REVISION TO 37 CFR 1.121

A. Amendments to the Specification

The following is the marked up version of a Substitute Specification as per 37 CFR 1.125.

APPARATUS AND METHOD FOR SLIDING EXERCISE APPARATUS AND RECREATIONAL DEVICE RECREATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to apparatuses and methods for exercise and recreation providing sliding motion, and more specifically to sheeting having a low-friction, durable surface which provides a top surface for structures such as ramps, trampolines and gym mats, and which also is adhesively applied to sports equipment, such as snow boards and gym shoes, for contacting such top surfaces.

TECHNICAL FIELD AND INVENTION

2. Description of the Related Art

— The present invention is directed to the use of a stick-on sheeting material, preferably in the form of a low friction adhesive graphic sticker, applied to a multiple of surfaces enabling a user to slide along a support surface. In practicing the present invention, an avid sports board enthusiast can develop sports board skills even when climactic conditions or geography would otherwise prohibit recreational activities and skill development exercise. Further, even without a sports board, one wishing to engage in sliding sports recreation, can adhere suitable stick-on sheeting material to one's outer clothing and shoes as well as to a variety of surfaces to again

~~enable a user to engage in sliding recreational activity.~~

~~BACKGROUND OF THE INVENTION~~

[0002] Virtually all sports board sport and ski enthusiasts face the problem of how to maximize recreational practice, skill development and exercise during times of the year when use of such equipment is not feasible. For example, snow boarders find that after a full winter season[[,]] their skills are enhanced, but after the spring, summer and fall months of inactivity, board skills must be redeveloped and tuned once winter conditions provide the an appropriate back drop backdrop for practicing the sport.

[0003] Not only do winter sport enthusiasts face the grim prospect of having to go long periods between board usage, but others such as surfers face similar constraints. Obviously, the a surfer can only effectively use a surf board when ocean access to a beach is available. But There there are times when the surfer[[s]] must travel inland and away from major bodies of water, preventing board usage.

[0004] In addition, even Even when the practicing development of board skills are is not the focus of the such recreational activity, it has been determined that there is a need to create a board sport enthusiast may wish access to sliding surfaces for shear sheer recreation. For example, it is contemplated that there is an unsatisfied need to develop both permanent and temporary recreational systems which include ramps, jumps, chutes and slides of limitless dimension and design in order to enable so that both children and adults to can experience the thrill of traversing an inclined low-friction, durable surface. The present invention can meet this need by quickly and inexpensively modifying an existing season-specific facility to transform the facility it into a year-round, all-weather recreational and skill-enhancing facility quickly and

inexpensively. One example is modifying waterslides such as are commonly found in amusement parks featuring water-type recreation. In a conventional waterslide, water is applied to the surface of an inclined chute, typically made of fiberglass and concavely arcuate and bounded by upturned edges, to create an aqueous, low-friction film on which a user slides. Because water is required, such a device is inappropriate for indoor use and outdoor use during cold weather. Moreover, some amusement park visitors are deterred from going on waterslides because they choose not to get their clothes wet.

[0005] My U.S. Pat. No. 6,231,483 B1 ("483"), which is incorporated by reference herein in its entirety, is directed to a sliding exercise and recreational apparatus including a sport board housed within a carrying case. The case bottom has a low-friction surface which facilitates sliding the apparatus over a contact area. The case top has a removable portion to enable a user to access the board while it is housed within the case so that the user can be supported on the board and navigate the contact area without removing the board from the case.

[0006] German published application DE 2654898 discloses a backing strip made of aluminum foil, synthetic fiber or paper. One side of the strip is coated with an adhesive and covered with a protective film. The other side is coated with a wax layer which provides a low-friction running surface for a ski when, after removing the film, the strip is adhesively applied to the underside of the ski.

[0007] It is thus a first principal object of the present invention to provide a simple[,] and effective yet low cost expedient which can be applied to sport boards, runners, shoes and the like, and as well as to surfaces upon which the boards their undersides are intended to slide, upon for enabling sliding board usage when climactic conditions would otherwise prevent such activity as well as for general recreation: and which is usable under all climatic conditions.

~~As noted above, in addition to board usage, it is also recognized that, recreationally, many of those who are physically active enjoy the opportunity to slide along a low-friction surface for the sheer thrill of developing speed and control as the sport is pursued. In the past, this was recognized by the producers of products such as portable water slides. The referenced product required that water being applied to the surface of a rolled out piece of flexible plastic material to reduce friction whereupon a user would jump onto the sliding surface and slide along its length. Because the typical portable waterslide recreational devices of the prior art require the application of water to reduce friction between a user and the sheet of flexible sliding plastic, the device was inappropriate for use indoors, during cold climactic conditions or when the user, due to such conditions, was required to wear clothing not designed to contact moisture during use.~~

[0008] ~~In light of the above, it is yet a~~ Another object of the present invention to provide a recreational device which would enable a user to progress slide along a sliding downwardly inclined support surface without the need for the use of a sport[[s]] board or any a liquid medium interface to reduce friction.

~~These and further objects will be more readily appreciated when considering the following disclosure and appended claims:~~

[0009] ~~Other objects of the invention will become evident when the following description is considered with the accompanying drawing figures. In the figures and description, numerals indicate the various features of the invention, like numerals referring to like features throughout both the drawings and description.~~

SUMMARY OF THE INVENTION

[0010] ~~In one aspect the present invention provides an exercise and recreational apparatus including at least one piece of stick-on sheeting having an adhesive outer layer, and an opposed outer layer consisting essentially of a low-friction, durable material. The apparatus further includes area sheeting having a top surface consisting essentially of a low-friction, durable material, and an opposed adhesive bottom surface. The area sheeting has surface dimensions which are relatively large compared to those of the stick-on pieces. The low-friction outer layer of each piece is adapted for engaging in sliding contact with the low-friction top surface of the area sheeting.~~

~~—— In a first embodiment, the present invention is directed to a sliding exercise apparatus and recreational device comprising a sports board being of sufficient rigidity to support a user. This sports board is provided with a top for contacting a user and a bottom for sliding along the support surface. The bottom of the sports board acts as a substrate for receiving stick-on sheeting material, the stick-on sheeting material having an adhesive layer for adhering the stick-on sheeting material to the sports board and a low-friction durable layer for sliding engagement with the support surface. The support surface, itself, is intended to employ low-friction durable sheeting for contacting the stick-on sheeting material located on the sports board.~~

~~—— As a second embodiment, the present invention is directed to a recreational device comprising the combination of a support surface and stick-on sheeting material having an adhesive layer and a low-friction durable layer, the adhesive layer being applied to a piece of wearing apparel of the user. The low-friction durable layer of the stick-on sheeting material is intended to contact the support surface during use. As in the previous embodiment, ideally, the~~

support surface has a low-friction durable sheeting for contacting the stick-on sheeting material of the user.

— As a third embodiment, the low friction durable sheeting of the present invention can be placed on diverse structures such as slides, trampolines, ramps, tarps, exercise pads, railings, sleds and the runners of ski bikes in order to produce low friction durable surfaces for sliding. The sheeting material can also be placed on carpets to temporarily convert an indoor residential environment to a recreational and sports activity center. In addition, all of the low friction durable sheeting material can be produced with graphical information to enhance the visual impact of the present invention and, where desirable, for displaying advertising and related messages.

[0011] In another aspect the invention provides a method for sliding exercise and recreation including the steps of: (a) adhering to a substrate at least one piece of stick-on sheeting having an outer layer consisting essentially of a low-friction, durable material; (b) adhering and conforming to a support structure, area sheeting having a top surface consisting essentially of a low-friction, durable material and having dimensions relatively large compared to the dimensions of each stick-on piece; and (c) adapting at least one stick-on piece for engaging its outer layer in sliding contact with the top surface of the area sheeting.

[0012] A more complete understanding of the present invention and other objects, aspects and advantages thereof will be gained from a consideration of the following description of the preferred embodiments read in conjunction with the accompanying drawings provided herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Fig. 1 is a perspective view of a typical sport[[s]] board, ~~in this instance, here a snow board, being provided with to whose underside is attached a piece of stick-on sheeting, material~~ so that the board can be used in practicing the present invention.

[0014] Figs. 2[[a]]A and 2[[b]]B are perspective and cross-sectional views, respectively, of a typical fabricated sport[[s]] board, ~~again, fabricated for practicing the present invention.~~

[0015] Fig. 3 ~~is a perspective view of shows~~ a user being provided with stick-on sheeting material at certain strategic locations ~~to enable the user to practice the present invention by traversing a support surface: traversing a hillside covered with area sheeting according to the invention. Pieces of stick-on sheeting are attached to the user's knee pads and shoe soles.~~

[0016] Fig. 4 is a perspective view of a typical rail ~~having been wrapped with a length of the stick-on sheeting, material of the present invention as well as and a sport board which is depicted in contact with the wrapped rail sheeting.~~

[0017] Fig. 5 shows a perspective view of a typical ramp and gym mat bearing the stick-on sheeting material of the present invention which converts these articles to recreational devices contemplated for use herein: ~~horizontal platform leading to a ramp and a plurality of generally horizontal, contiguous gym mats. The ramp and mats are covered with area sheeting according to the invention.~~

[0018] Fig. 6 shows a typical perspective view of a traditional sliding ramp of the type used in recreational water parks. In this instance, the slide has been used as a support for sheets of stick-on material of the present invention to enable the use of such slides without water. waterslide modified by applying area sheeting according to the invention.

[0019] Fig. 7 shows, in perspective, a typical trampoline and user on a snow board, to whose underside is attached a piece of stick-on sheeting, bouncing on a trampoline covered with area sheeting superposed on the trampoline fabric practicing the present invention.

[0020] Fig. 8 shows, in perspective, a ski bicycle bike, intended to be used on snow-covered slopes employing the present invention so that it can now be used in dry environments and indoors. to whose runners are attached pieces of stick-on sheeting, traversing an undulating ramp covered with area sheeting.

DETAILED DESCRIPTION OF THE INVENTION PREFERRED EMBODIMENTS

[0021] While the present invention is open to various modifications and alternative constructions, the preferred embodiments shown in the drawings will be described herein in detail. It is to be understood, however, there is no intention to limit the invention to the particular forms disclosed. On the contrary, it is intended that the invention cover all modifications, equivalences and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

[0022] As noted previously, as a first embodiment, the present invention is directed to a sliding exercise apparatus and recreational device comprising a sports board being of sufficient size and

rigidity to support a user. Fig. 1 shows a snow board 10 which has been modified for practicing the present invention. Board 10 has a top side 11 to which are attached supporting bindings 12, and an underside 16 to which is attached a piece 13 of low-friction, durable stick-on sheeting. Sheeting piece 13 includes an adhesive layer 15 which can be provided with a removable backing (not shown) which is peeled from layer 15 prior to use. Preferably the adhesive is selected so that sheeting piece 13 is easily removable from underside 16. Alternatively, the adhesive is such that piece 13 is permanently adhered to underside 16. Sheeting piece 13 further includes a low-friction, durable layer 14 opposed to layer 15. Preferably, layer 14 consists essentially of NYLON™, DACRON™, sailcloth or a polyester resin. Sheeting piece 13 can be cut to size and shape to fit over the entire underside 16 of board 10. Alternatively, several smaller pieces of sheeting can be selectively placed to create areas of relatively low- and high-friction enabling a skillful user to control the board's sliding characteristics while traversing the low-friction, durable surface of a support structure such as shown in Figs. 3, 5, 6, 7 and 8.

— Virtually any sports board such as a snow board, surf board, skis, a skate board or a body board can be employed. For the sake of brevity, only a snow board was shown as element 10 of Fig. 1. This board is provided with top surface 11 supporting bindings 12 and bottom surface 16. Under ordinary conditions, bottom surface 16 would be intended to contact and traverse upon a snow covered slope. However, in practicing the present invention, snow board 10 is intended to slide along a support surface, and as such, bottom surface 16 has been made to receive suitable stick-on sheeting material 13.

— Stick-on sheeting material 13 is comprised of an adhesive layer 15 which can be provided with a removable backing material (not shown) which can be peeled from stick-on sheeting material 13 prior to use. Stick-on sheeting material 13 can be provided in blocks or sheets which can be cut to size to fit over the entire bottom surface of board 10, or alternatively, can be

~~selectively placed to create areas of low-friction and relatively high-friction enabling a user to control the board's sliding characteristics on the support surface as one's skill level increases. In any regard, stick-on sheeting material 13 is provided with adhesive layer 15 enabling the stick-on sheeting material to selectively and preferably removably adhere to bottom surface 16. This stick-on sheeting material is also provided with a low-friction durable outer layer 14 enabling board 10 to traverse support surface 37 (Fig. 3) as discussed hereinafter.~~

[0023] ~~Besides being able to convert the suitable adapt conventional sport[[s]] boards to practice the present invention, the present invention further contemplates dedicated boards produced solely for use herein dedicated boards are feasible. In this regard, reference is made to Figs. 2[[a]]A and 2[[b]]B showing show a typical rectangular board 20 having a cushioned top surface side 21 and bottom surface an underside 22 composed of any number of a plurality of cushioning layers made of a material such as styrafoam STYROFOAM™. To add structural rigidity, top surface side 21 and bottom surface underside 22 can encase sandwich a rigid membrane core such as a segment of plywood 25 made of a material such as plywood to complete the composite. Board 20 further includes a piece 23 of stick-on sheeting having an adhesive layer 24 attached to underside 22, and an opposed low-friction, durable layer 26. Preferably, piece 23 is permanently adhered to underside 22.~~

~~Board 20 is further provided with stick-on sheeting material 23 having an adhesive layer for adhering sheeting material 23 to the surface of bottom 22 while being provided with a low-friction durable layer for engaging in sliding contact surface 37.~~

[0024] ~~Referring to Fig. 3, As further noted previously, in addition to converting existing sports boards for use herein, it is also contemplated that the present invention directed to a sliding exercise apparatus and recreational device shown by the combination of Fig. 3. In this instance,~~

a support structure 37 36, here a hillside, is covered with area sheeting 37 having a provided with upper surface 35 is composed of a low-friction, durable sheeting material. Surface 35 preferably consists essentially of NYLON™, DACRON™, sailcloth or a polyester resin. Low-friction durable The area sheeting 37 can be composed of an suitable low-friction durable material such as nylon, Texlon, sailcloth, Dacron and polyester resins applied in sheets which can be rolled out onto to a suitable the support structure. As shown in In Fig. 3, the low-friction durable area sheeting 37 is simply applied to an existing sloping hillside converting the hillside into a low-friction sliding apparatus area. Although not shown, low-friction durable sheeting 37 Area sheeting can be virtually any length and width, and various lengths of such material can be laid end to end and side to side end-to-end and side-to-side as shown in applicant's prior U.S. Application Serial Number 09/344,302 filed on June 24, 1999, the disclosure of which is incorporated herein by reference my '483 patent. The slide surface created by low-friction durable sheeting material 37 Moreover, area sheeting according to the invention can be placed on laid over any support structure surface whatsoever including custom made ramps, frames and even horizontal surfaces, both indoors and outdoors as climactic conditions and environmental concerns present themselves. As further shown in the referenced '302 application '483 patent, frames, pillow-like cushions and other expedients can be placed beneath and in conjunction with a low-friction durable sheeting 37 area sheeting to create bumps, moguls, dips and protrusions enhancing increasing the degree of difficulty in practicing the present invention and thus varying the skill set necessary in using it traversing the area sheeting.

[0025] As further noted previously, in addition to employing a sports board such as boards 10 and 20 of Figs. 1 and 2, the stick-on sheeting material contemplated for use herein can be applied to a piece of wearing apparel of user 30 (Fig. 3). Fig. 3 further shows a user 30 traversing the area sheeting 37. User 30 is shown wearing knee pads 33 each having a piece of stick-on sheeting 34 adhered thereto. User 30 also wears shoes with soles 31 each having a piece of stick-

on sheeting adhered thereto. User 30 could also have one or more pieces of stick-on sheeting adhered to his clothing. As in the previous embodiments, the stick-on sheeting material can include a low-friction durable layer and an adhesive layer, the latter facilitating the application of the stick-on sheeting material to the user's clothing or wearing apparel. For example, as further shown in Fig. 3, stick-on sheeting material 34 can be applied directly to the surface of the user's knee pads 33 enabling the user 30 to slideably progress progressing down area sheeting material 37 upon surface 35 either kneeling or standing. Alternatively, stick-on sheeting material 32 can be applied to the soles of shoes 31 enabling user 30 to progress down sheeting material 37 upon surface 35 while standing. This latter activity would greatly enhance a user's the ability to balance upon a low-friction surface, increasing one's thus developing skills which can be applied directly to such sports such as snow boarding and surfing. As such, the present invention is not only recreational but also capable of providing a user with beneficial skills.

[0026] Turning to Fig. 4[[,]] shows a handrail assembly rail 40 typical of a handrail such as is commonly installed on a staircase is depicted. The construction of handrail Assembly 40 is again typical consisting of includes vertical support members 41 and diagonally constructed an inclined handrail 42, the angle of whose inclination of which generally parallels the angle inclination of the staircase upon which it is installed.

[0027] It is quite common not uncommon for skateboarders to jump upon a handrail and slide down the rail. A similar effect can be achieved in this instance by tightly wrapping handrail 42 with a length of the low-friction, durable stick-on sheeting material 43 of the present invention. By wrapping either the top surface or the entire surface of handrail 42 with the low friction durable sheeting material 43, handrail 42 can be made selectively into a sliding surface which both protects the handrail 42 from abusive contact with a sliding board and also is capable of

being ~~can be~~ converted back into a traditional handrail by removing the sheeting material 43 therefrom. In use, board 44, supporting a rider, can be caused to travel along the surface of sheeting material 43. To enhance sliding contact, the underside 46 of board 44 has adhered thereto a piece of stick-on sheeting material 45 as described with respect to ~~on the~~ Fig. 1 above board.

[0028] Fig. 5 depicts a rather simplistic but effective means of creating ~~assembling~~ a recreational device out of parts ~~which were never not~~ intended for that purpose. In this instance, a ramp 50 ~~having~~ has a generally horizontal platform 52 and an inclined incline surface 53 is shown. At the bottom of ramp 53 ~~50 is are~~ placed a typical plurality of contiguous gym mat mats 51 ~~each~~ having a body portion 55. ~~Both the Each gym mat and the incline inclined~~ surface 53 are selectively covered by low-friction, durable stick-on sheeting material 56, and 54, respectively. ~~In use, one could stand~~ A user stands on platform 52 and, slide either with or without a board, slides down sheeting 54 on incline inclined surface 53 on stick-on sheeting 54 and continue ~~continues~~ sliding along gym mat 51 ~~on the surface created by stick-on sheeting material 56 the sheeting 56 on mats 51.~~

[0029] As in all the support structure embodiments disclosed herein, area sheeting material such as sheetings 54 and 56 can be applied to an entire surface, or selectively applied to a surface in order to create certain safety characteristics and ~~points~~ zones of interest. For example, ~~the~~ edges along ramp inclined surface 53 and gym mat segment mat body portions 55 can be left without the coating of sheeting material so that as a user progresses too close to an edge, relatively higher friction areas will ~~contact the user thus slowing~~ slow the sliding motion and ~~helping to help~~ prevent the user from falling from ~~off~~ the sliding surface. In addition, segments ~~within on~~ a sliding surface can be left without stick-on sheeting material to provide areas of relatively high friction to ~~which~~ enhance the sliding experience. For example, enhanced skill and dexterity can

be promoted by encouraging a user to navigate over a surface while avoiding high friction areas in order to increase speed.

[0030] Fig. 6 typifies the application of the present invention to an environment which was not intended to be used in the manner suggested herein. Specifically, illustrates a waterslide ramp 60 with upturned edges 61 typifies an inclined waterslide ramp which is intended to receive and to channel a continuous stream of water upon which a user rides in traversing down waterslide 60 which, conventionally, would be traversed by a user riding on a low-friction film created by a continuous stream of water, but which here is modified according to the present invention. The waterslide 60 is provided with upturned curved edges 61 and can be employed to receive stick-on Area sheeting material 62 in order to provide provides a low-friction surface thus obviating the need for water. It is envisioned that a preexisting seasonal waterslide park could be completely converted to an all-season wet and [[a]] dry facility while maintaining the recreational equipment typifying such facilities without necessitating major modifications to the existing equipment.

[0031] Turning to Fig. 7, it It is well known that trampolines have been employed are used by sport[[s]] board enthusiasts to practice their jumping skills. For example, the appended figure discloses Fig. 7 shows an individual 75 on a snow board 76 jumping on a trampoline 70. The trampoline includes a frame 73 mounted on legs 78, and chord 72 attaching fabric sheet 71 thereto and a fabric sheet 71 attached to the frame 73 by a cord 72.

[0032] In prior use of the using trampolines to practice jumping, the somewhat sharp edges of the sport[[s]] boards were are known to excessively abrade the trampoline fabric. To deal with this issue avoid this problem, users would oftentimes often put duct tape over the board edges of the board. This remediation is unsightly and can adversely affect the sensation that a user would otherwise experience.

[0033] The present invention, by contrast, employs the stick-on sheeting material 77 on the underside 79 of board 76, either with or without padding between the board and sheeting material. ~~In addition, the present invention contemplates, as an optional expedient~~ Optionally, ~~the use of the same low-friction sheeting material 74, shown in a partial cut away fashion~~ cutaway view in Fig. 7, can be placed on top of fabric 71. This additional sheeting material further acts to protect fabric 71 and changes the coefficient of friction of the trampoline, ~~thereby changing to change~~ the tactile experience of the user.

[0034] Finally, Fig. 8 depicts ~~one of the many creative ways to which the stick-on low friction and durable sheeting material of the present invention can be employed.~~ For example, a bicycle 82 ~~can be fit fitted~~ with ski-like runners 83, and 84 for use on incline surface 80. ~~If runners 83 and 84 are configured into ski-like segments, bicycle 82 can be employed on traversing a snow-covered slope. Alternatively, ramp 80 can be used indoors by covering it with low friction stick-on sheeting material 81. Bicycle 82 is adapted for use on an undulating ramp 80 covered with low-friction area sheeting 81 by adhering pieces of low-friction, durable sheeting (not shown) to the undersides of runners 83, 84.~~

[0035] It is contemplated that the present invention can be used on a multitude of support surfaces, from carpets to concrete, which are horizontal, inclined or declined and ~~having have~~ smooth, rough or mogul-like contours. It is also ~~further~~ contemplated that the present invention can be employed on ~~even inflatable supports support structures, as the nature of the support is not a critical feature in practicing the present invention examples of which are described and shown in my '483 patent. Applying strips of stick-on sheeting to inflatable support structures can be particularly advantageous because besides providing a low-friction, durable surface, such strips would serve to protect and, if necessary, repair support surfaces susceptible to tears and~~

punctures. Numerous types of sport[[s]] boards can be employed such as snow boards, surf boards, skis, skate boards, body boards, sail boards, wake boards, water skis, sleds and the runners of ski bikes bicycles. It is further contemplated that when a support structure such as shown in Figs. 3, 6 or 8 is used, the invention can be practiced in any climatic condition, e.g., on a hill on a rainy or snowy day, or on a wet, converted waterslide.

The following is the clean version of the Substitute Specification.

APPARATUS AND METHOD FOR SLIDING EXERCISE AND RECREATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to apparatuses and methods for exercise and recreation providing sliding motion, and more specifically to sheeting having a low-friction, durable surface which provides a top surface for structures such as ramps, trampolines and gym mats, and which also is adhesively applied to sports equipment, such as snow boards and gym shoes, for contacting such top surfaces.

2. Description of the Related Art

[0002] Virtually all board sport and ski enthusiasts face the problem of how to maximize practice, skill development and exercise during times of the year when use of such equipment is not feasible. For example, snow boarders find that after a full winter season their skills are enhanced, but after the spring, summer and fall months of inactivity, board skills must be redeveloped and tuned once winter conditions provide an appropriate backdrop for practicing the sport.

[0003] Not only do winter sport enthusiasts face the grim prospect of having to go long periods between board usage, others such as surfers face similar constraints. Obviously, a surfer can only effectively use a surf board when access to a beach is available. But there are times when the surfer must travel inland and away from major bodies of water, preventing board usage.

[0004] Even when development of board skills is not the focus of such recreational activity, a board sport enthusiast may wish access to sliding surfaces for sheer recreation. For example, it is contemplated that there is an unsatisfied need to develop both permanent and temporary recreational systems which include ramps, jumps, chutes and slides so that both children and adults can experience the thrill of traversing an inclined low-friction, durable surface. The present invention can meet this need by quickly and inexpensively modifying an existing season-specific facility to transform it into a year-round, all-weather recreational and skill-enhancing facility. One example is modifying waterslides such as are commonly found in amusement parks featuring water-type recreation. In a conventional waterslide, water is applied to the surface of an inclined chute, typically made of fiberglass and concavely arcuate and bounded by upturned edges, to create an aqueous, low-friction film on which a user slides. Because water is required, such a device is inappropriate for indoor use, and outdoor use during cold weather. Moreover, some amusement park visitors are deterred from going on waterslides because they choose not to get their clothes wet.

[0005] My U.S. Pat. No. 6,231,483 B1 ("483"), which is incorporated by reference herein in its entirety, is directed to a sliding exercise and recreational apparatus including a sport board housed within a carrying case. The case bottom has a low-friction surface which facilitates sliding the apparatus over a contact area. The case top has a removable portion to enable a user to access the board while it is housed within the case so that the user can be supported on the board and navigate the contact area without removing the board from the case.

[0006] German published application DE 2654898 discloses a backing strip made of aluminum foil, synthetic fiber or paper. One side of the strip is coated with an adhesive and covered with a protective film. The other side is coated with a wax layer which provides a low-friction running surface for a ski when, after removing the film, the strip is adhesively applied to the underside of the ski.

[0007] It is a principal object of the present invention to provide a simple and effective yet low cost expedient which can be applied to sport boards, runners, shoes and the like, as well as to surfaces upon which their undersides are intended to slide, and which is usable under all climatic conditions.

[0008] Another object of the invention to provide a recreational device which would enable a user to slide along a downwardly inclined support surface without the need for the use of a sport board or a liquid interface to reduce friction.

[0009] Other objects of the invention will become evident when the following description is considered with the accompanying drawing figures. In the figures and description, numerals indicate the various features of the invention, like numerals referring to like features throughout both the drawings and description.

SUMMARY OF THE INVENTION

[0010] In one aspect the present invention provides an exercise and recreational apparatus including at least one piece of stick-on sheeting having an adhesive outer layer, and an opposed outer layer consisting essentially of a low-friction, durable material. The apparatus further

includes area sheeting having a top surface consisting essentially of a low-friction, durable material, and an opposed adhesive bottom surface. The area sheeting has surface dimensions which are relatively large compared to those of the stick-on pieces. The low-friction outer layer of each piece is adapted for engaging in sliding contact with the low-friction top surface of the area sheeting.

[0011] In another aspect the invention provides a method for sliding exercise and recreation including the steps of: (a) adhering to a substrate at least one piece of stick-on sheeting having an outer layer consisting essentially of a low-friction, durable material; (b) adhering and conforming to a support structure, area sheeting having a top surface consisting essentially of a low-friction, durable material and having dimensions relatively large compared to the dimensions of each stick-on piece; and (c) adapting at least one stick-on piece for engaging its outer layer in sliding contact with the top surface of the area sheeting.

[0012] A more complete understanding of the present invention and other objects, aspects and advantages thereof will be gained from a consideration of the following description of the preferred embodiments read in conjunction with the accompanying drawings provided herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Fig. 1 is a perspective view of a typical sport board, here a snow board, to whose underside is attached a piece of stick-on sheeting, so that the board can be used in practicing the present invention.

[0014] Figs. 2A and 2B are perspective and cross-sectional views, respectively, of a typical sport board fabricated for practicing the invention.

[0015] Fig. 3 shows a user traversing a hillside covered with area sheeting according to the invention. Pieces of stick-on sheeting are attached to the user's knee pads and shoe soles.

[0016] Fig. 4 is a perspective view of a rail wrapped with a length of stick-on sheeting, and a sport board in contact with the rail sheeting.

[0017] Fig. 5 shows a horizontal platform leading to a ramp and a plurality of generally horizontal, contiguous gym mats. The ramp and mats are covered with area sheeting according to the invention.

[0018] Fig. 6 shows a perspective view of a waterslide modified by applying area sheeting according to the invention.

[0019] Fig. 7 shows a user on a snow board, to whose underside is attached a piece of stick-on sheeting, bouncing on a trampoline covered with area sheeting superposed on the trampoline fabric.

[0020] Fig. 8 shows, a ski bicycle to whose runners are attached pieces of stick-on sheeting, traversing an undulating ramp covered with area sheeting.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] While the present invention is open to various modifications and alternative constructions, the preferred embodiments shown in the drawings will be described herein in detail. It is to be understood, however, there is no intention to limit the invention to the

particular forms disclosed. On the contrary, it is intended that the invention cover all modifications, equivalences and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

[0022] Fig. 1 shows a snow board 10 which has been modified for practicing the present invention. Board 10 has a top side 11 to which are attached supporting bindings 12, and an underside 16 to which is attached a piece 13 of low-friction, durable stick-on sheeting. Sheeting piece 13 includes an adhesive layer 15 which can be provided with a removable backing (not shown) which is peeled from layer 15 prior to use. Preferably the adhesive is selected so that sheeting piece 13 is easily removable from underside 16. Alternatively, the adhesive is such that piece 13 is permanently adhered to underside 16. Sheeting piece 13 further includes a low-friction, durable layer 14 opposed to layer 15. Preferably, layer 14 consists essentially of NYLON™, DACRON™, sailcloth or a polyester resin. Sheeting piece 13 can be cut to size and shape to fit over the entire underside 16 of board 10. Alternatively, several smaller pieces of sheeting can be selectively placed to create areas of relatively low- and high-friction enabling a skillful user to control the board's sliding characteristics while traversing the low-friction, durable surface of a support structure such as shown in Figs. 3, 5, 6, 7 and 8.

[0023] Besides being able to adapt conventional sport boards to practice the present invention, dedicated boards are feasible. Figs. 2A and 2B show a typical rectangular board 20 having a cushioned top side 21 and an underside 22 composed of a plurality of cushioning layers made of a material such as STYROFOAM™. To add structural rigidity, top side 21 and underside 22 sandwich a rigid core 25 made of a material such as plywood. Board 20 further includes a piece 23 of stick-on sheeting having an adhesive layer 24 attached to underside 22, and an opposed low-friction, durable layer 26. Preferably, piece 23 is permanently adhered to underside 22.

[0024] Referring to Fig. 3, a support structure 36, here a hillside, is covered with area sheeting 37 having a surface 35 composed of a low-friction, durable material. Surface 35 preferably consists essentially of NYLON™, DACRON™, sailcloth or a polyester resin. The area sheeting 37 can be applied in sheets rolled out onto the support structure. In Fig. 3, the area sheeting 37 is simply applied to an existing sloping hillside converting the hillside into a low-friction sliding area. Area sheeting can be virtually any length and width, and various lengths can be laid end-to-end and side-to-side as shown in my '483 patent. Moreover, area sheeting according to the invention can be laid over any support structure whatsoever including custom made ramps, frames and horizontal surfaces, both indoors and outdoors. As shown in the '483 patent, frames, pillow-like cushions and other expedients can be placed beneath and in conjunction with area sheeting to create bumps, moguls, dips and protrusions increasing the degree of difficulty in traversing the area sheeting.

[0025] Fig. 3 further shows a user 30 traversing the area sheeting 37. User 30 is shown wearing knee pads 33 each having a piece of stick-on sheeting 34 adhered thereto. User 30 also wears shoes with soles 31 each having a piece of stick-on sheeting adhered thereto. User 30 could also have one or more pieces of stick-on sheeting adhered to his clothing. Practicing traverses while in the standing position could enhance the ability to balance upon a low-friction surface, thus developing skills which can be applied directly to sports such as snow boarding and surfing.

[0026] Fig. 4 shows a handrail assembly 40 such as is commonly installed on a staircase. Assembly 40 includes vertical support members 41 and an inclined handrail 42 whose inclination generally parallels the inclination of the staircase.

[0027] It is not uncommon for skateboarders to jump upon a handrail and slide down the rail. A similar effect can be achieved by tightly wrapping handrail 42 with a length of low-friction, durable stick-on sheeting 43. By wrapping either the top surface or the entire surface of handrail 42 with the sheeting 43, handrail 42 can be made selectively into a sliding surface which both protects the handrail from abusive contact with a sliding board and can be converted back into a traditional handrail by removing the sheeting 43 therefrom. In use, board 44, supporting a rider, can be caused to travel along the surface of sheeting 43. To enhance sliding contact, the underside 46 of board 44 has adhered thereto a piece of stick-on sheeting 45 as on the Fig. 1 board.

[0028] Fig. 5 depicts a simplistic but effective means of assembling a recreational device out of parts not intended for that purpose. A ramp 50 has a generally horizontal platform 52 and an inclined surface 53. At the bottom of ramp 50 are placed a plurality of contiguous gym mats 51 each having a body portion 55. Each mat and the inclined surface 53 are covered by low-friction, durable stick-on sheeting 56, 54, respectively. A user stands on platform 52 and, either with or without a board, slides down sheeting 54 on inclined surface 53 and continues sliding along the sheeting 56 on mats 51.

[0029] As in all the support structure embodiments disclosed herein, area sheeting such as sheetings 54 and 56 can be applied to an entire surface, or selectively applied to a surface in order to create certain safety characteristics and zones of interest. For example, the edges along inclined surface 53 and mat body portions 55 can be left without sheeting so that as a user progresses too close to an edge, relatively higher friction areas will slow the sliding motion and help prevent the user from falling off the sliding surface. In addition, segments on a sliding surface can be left without stick-on sheeting to provide areas of relatively high friction which enhance the sliding experience. For example, enhanced skill and dexterity can be promoted by

encouraging a user to navigate over a surface while avoiding high friction areas in order to increase speed.

[0030] Fig. 6 illustrates a waterslide 60 with upturned edges 61 which, conventionally, would be traversed by a user riding on a low-friction film created by a continuous stream of water, but which here is modified according to the present invention. Area sheeting 62 provides a low-friction surface obviating the need for water. It is envisioned that a seasonal waterslide park could be converted to an all-season wet and dry facility without necessitating major modifications to the existing equipment.

[0031] It is well known that trampolines are used by sport board enthusiasts to practice their jumping skills. Fig. 7 shows an individual 75 on a snow board 76 jumping on a trampoline 70. The trampoline includes a frame 73 mounted on legs 78, and a fabric sheet 71 attached to the frame 73 by a cord 72.

[0032] In using trampolines to practice jumping, the somewhat sharp edges of the sport boards are known to excessively abrade the trampoline fabric. To avoid this problem, users often put duct tape over the board edges. This remediation is unsightly and can adversely affect the sensation that a user would otherwise experience.

[0033] The present invention, by contrast, employs stick-on sheeting 77 on the underside 79 of board 76, either with or without padding between the board and sheeting. Optionally, low-friction sheeting 74, shown in a partial cutaway view in Fig. 7, can be placed on top of fabric 71. This additional sheeting further acts to protect fabric 71 and changes the coefficient of friction of the trampoline, thereby changing the tactile experience of the user.

[0034] Fig. 8 depicts a bicycle 82 fitted with ski-like runners 83, 84 for traversing a snow-covered slope. Bicycle 82 is adapted for use on an undulating ramp 80 covered with low-friction area sheeting 81 by adhering pieces of low-friction, durable sheeting (not shown) to the undersides of runners 83, 84.

[0035] It is contemplated that the present invention can be used on a multitude of support surfaces, from carpets to concrete, which are horizontal, inclined or declined and have smooth, rough or mogul-like contours. It is further contemplated that the invention can be employed on inflatable support structures, examples of which are shown and described in my '483 patent. Applying strips of stick-on sheeting to inflatable support structures can be particularly advantageous because besides providing a low-friction, durable surface, such strips would serve to protect and, if necessary, repair support surfaces susceptible to tears and punctures. Numerous types of sport boards can be employed such as snow boards, surf boards, skis, skate boards, body boards, sail boards, wake boards, water skis, sleds and the runners of ski bicycles. It is further contemplated that when a support structure such as shown in Figs. 3, 6 or 8 is used, the invention can be practiced in any climatic condition, e.g., on a hill on a rainy or snowy day, or on a wet, converted waterslide.